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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/533,678	03/23/2000	Masami Hatori	Q56799	1082

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EXAMINER

NGUYEN, TUAN M

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 07/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/533,678

Applicant(s)

HATORI, MASAMI

Examiner

Tuan M Nguyen

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-- Th MAILING DATE f this communication appears on the cov r sheet with th correspondence addr ss --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 March 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.



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TECHNOLOGY CENTER 2800**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawing (fig. 1-12) is objected for minor informaty. The boxes show in figure 1-12 are not labeled as required by 37 CFR 1.83(a). Applicant is required to submit a drawing correction for approval as require by rule 37 CFR 1.123

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 7-8, 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hatori (US patent 6,195,198 B1).

With respect to claim 1, Hatori disclose an optical wavelength conversion system comprises a semiconductor laser (10), a laser beam (11), a second harmonic (19), an optical wavelength element (15) includes a substrate (16), a periodic domain (17), an optical waveguide (18), note cols. 5-8, see fig 1-2.

With respect to claim 2, Hatori discussed about the spontaneous polarization direction, note cols. 8-10.

With respect to claim 7, Hatori discloses a semiconductor laser (10), the laser beam (11), and the optical wavelength conversion element (15), see fig 8.

With respect to claim 8, Hatori discloses a semiconductor laser (10), a laser beam (11), a substrate (40) and an optical wavelength conversion element (41), note cols. 10-12, see fig. 9.

With respect to claim 11, Hatori discussed about the optical wavelength conversion element converts wavelength of fundamental wave to a wavelength of a second harmonic, note col. 1.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 3-4, 5-6, 9-10, 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatori (US patent 6,195,198 B1) in view of Mizuuchi et al (US patent 6,002,515).

With respect to claims 3 – 4 and 6, Hatori discussed all about except for the predetermined angle is larger than 0 degree and smaller than 20 degree. Whereas Mizuuchi discussed above the predetermined angle, note cols. 24-25, see fig. 17. For the benefit of using

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predetermined angle, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hatori with the predetermined angle as taught or suggested by Mizuuchi.

With respect to claim 5, Hatori discussed all about except for the proton exchange and annealing. Whereas Mizuuchi et al discussed about the proton exchange and annealing, note cols. 16-17, see fig 18. For the benefit of proton exchange and annealing, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hatori with the proton exchange and annealing as taught or suggested by Mizuuchi.

With respect to claims 9 and 10, Hatori discussed all about except for the semiconductor laser and optical wavelength conversion element are bonded together with a SiO<sub>2</sub> and the thickness. Whereas Mizuuchi et al discussed about the SiO<sub>2</sub> and the thickness of the film, note cols. 19-20, see figs. 9b-9c. For the benefit of using SiO<sub>2</sub> and the thickness of the film, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hatori with the SiO<sub>2</sub> and the thickness of the film as taught or suggested by Mizuuchi.

With respect to claim 12, Hatori discussed all about except for the TE mode in which a polarization direction is parallel to the substrate and which can adjust a center wavelength of stimulated emission of the laser beam. Whereas Mizuuchi discussed about the TE mode in which a polarization direction is parallel to the substrate, note cols. 1-6. For the benefit of polarization direction is parallel to the substrate, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hatori with the polarization direction is parallel to the substrate as taught or suggested by Mizuuchi.

With respect to claims 13 and 15, Hatori discussed all about except for the mounting and the flat surface. Whereas Mizuuchi et al discussed about the mounting and the flat surface, note cols. 11, 31, see fig 23. For the benefit of mounting and flat surface, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hatori with the mounting and flat surface as taught or suggested by Mizuuchi.

With respect to claim 14, Hatori discussed all about except for the difference distance between semiconductor laser and the positions of a laser beam and the optical wavelength conversion element to the optical waveguide. Whereas Mizuuchi et al discussed about the difference distance between the semiconductor laser and the exit position of laser beam and the optical wavelength conversions element and the optical waveguide, note cols. 57-58, see fig 65. For the benefit of distance difference between semiconductor laser and laser beam and optical wavelength conversion element and optical waveguide, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Hatori with the distance difference between semiconductor laser, laser beam, optical wavelength conversion element and optical waveguide as taught or suggested by Mizuuchi.

#### ***Citation Of The Pertinent References***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Mizuuchi et al (US patent 5,652,674) discloses method for manufacturing domain inverted region, optical wavelength conversion device utilizing such domain-inverted region and method for fabricating such device.


The patent to Nitanda et al (US patent 5,359,452) discloses lithium tantalite monocrystal, monocrystal substrate, and photo element.

***Communication Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247. The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

  
Paul Ip  
SPE  
Art unit 2828

TMN  
July 9, 2002